

REMARKS

Claims 1-4, 6, 11 and 12 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Perkins et al. (U.S. Patent Number 5,442,633, hereinafter "Perkins '633"), claim 5 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Perkins '633, claims 7-9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Perkins '633 in view of Perkins (U.S. Patent Number 5,159,592, hereinafter "Perkins '592"), and claim 10 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Perkins '633 in view of Kimball (U.S. Patent Number 5,953,322). The Examiner's thoughtful and thorough reply in the *Response to Arguments* section of the present office action is appreciated. The claims have been specifically amended to more explicitly express their meaning to the reader. Specifically, claim 1 has been amended to include the clause stating that "wherein transferring the routing function comprises transferring context information that comprises mobility and security information," and claim 12 to include the clause stating that "the context comprises mobility and security information." Support for this text can at least be found on page 6, lines 8-10 of the application as filed.

Regarding the rejection of independent claims 1 and 12, the Examiner cites the abstract of Perkins '633, which reads (emphasis added):

A method for routing a packet of information between two hosts that are coupled to a network. Each of the hosts have a unique network address, and at least one of the hosts is a mobile host (10) that does not have a fixed network coupling location. The method includes a first step of (a) **transmitting a packet from the mobile host to a second, destination host on the network** through a wireless link that is established between the mobile host and a base access station (12) that serves a current physical location of the mobile host. The base access station is coupled to the network via a subnetwork (LAN) (14), and **the packet includes a first Internet Protocol (IP) Loose Source Routing (LSR) option that includes a network address of the base access station.** A second step (b) **receives with the destination host the packet that includes the first IP LSR option.** A third step (c) **transmits a further, reply packet from the second host to the mobile host** via the base access station in accordance with a **path reversal technique** wherein the reply packet includes a second IP LSR option that specifies as a first Routing address the network address of the base access station. As a result, **the reply packet is directed through the network** to the base access station that serves the current physical location of the mobile host, and an optimal, fast routing of the packet is achieved without

involving intermediate gateways (16, 18).

Thus, the abstract of Perkins discloses the transmission of a packet that includes a first Internet Protocol (IP) Loose Source Routing (LSR) option by the mobile host to a second host. The second host, having received the packet with the IP LSR option can now reply to the mobile host using a path reversal technique without involving intermediate gateways. Column 6, line 39 – column 7, line 46 of Perkins '633 describes the use of the IP LSR option in more detail and reads (emphasis added):

An aspect of this invention is the use of an IP feature known as a Loose Source Record Routing, or Loose Source Routing (LSR) option. By exploiting the LSR option in a novel fashion within the context of a wireless network having migrating MHs 10, the invention enables a packet from a source host to bypass the MR 20 and to be routed instead directly to the BAS 12 that serves the MH 10 that is the destination for the packet.

As seen in FIG. 3a, the contents of an internet datagram header includes an OPTIONS field. Options may or may not appear in a datagram. What is optional is their transmission in any particular datagram, not their implementation. That is, the OPTIONS must be implemented by all IP modules (hosts and gateways). The option type of particular relevance herein is the LSR option, which is used to route an internet datagram based on information supplied by the source of the datagram.

Referring to FIG. 3b, the LSR option provides a means for the source of an internet datagram to supply routing information to be used by the gateways in forwarding the datagram to the destination, and to record the route information.

The LSR option begins with the option type code (131). The second octet is the option length, the length including the option type code, the length octet, a Pointer octet, and length-3 octets of Routing Data. The third octet is the Pointer into the Route Data, and which indicates the octet which begins the next source address to be processed. The Pointer is relative to this option, and the smallest legal value for the Pointer is four.

The Route Data is composed, typically, of a series of internet addresses. Each internet address is 32 bits, or four octets. If the Pointer is greater than the length, that is the Pointer points beyond the last address entry in the Route Data, the source route is empty (and the recorded route full) and the routing is then based on the datagram Destination Address Field (FIG. 3a).

If the address in the Destination Address Field has been reached, and the Pointer is not greater than the length, the next address in the source route replaces the address in the Destination Address Field, the recorded route address replaces the Source Address just used, and the Pointer is increased by four.

The recorded route address is the internet module's own internet address, as known in the environment into which this datagram is being forwarded.

The procedure of replacing the source route with the recorded route (though it is in the reverse of the order required to be used as a source route) means that the LSR option (and the IP header as a whole) remains a constant length as the datagram progresses through the internet.

This option is referred to as a Loose Source Route because the gateway 18 (MR 20) or host IP is allowed to use any route of any number of intermediate gateways to reach the next address in the route.

As employed by the invention, the LSR option includes a list of network layer addresses of the BAS(s) 12 serving the current location of the MH 10, and employs the Pointer to point to one of the addresses. It is a specified requirement of the Network Layer Protocol that responses to packets that use the LSR option be delivered along the reverse of the path specified by the packet initiating the response (e.g. the packet from the MH 10). Thus, it follows that forwarding of the response packets is determined by the addresses specified by the LSR option, i.e. the addresses of the BAS(s) 12 of the cell(s) presently serving the MH 10. As a result of the use of the LSR option, a single IP header conveys information both about the identity of the MH 10, in the form of the Destination Address of the packet, as well as about the topological location of the MH 10, in the form of the BAS 12 address entry or entries of the LSR option Route Data fields.

In contrast to the disclosure of Perkins '633, claim 1 recites "transferring a routing function from a packet data gateway to a Base Station System, based on the determination that the second remote unit is within the local network so that data can be routed from the first remote unit to the second remote unit via the BSS without routing the data through the packet data gateway" (emphasis added). Claim 12 recites "receiving, at a base station a context, wherein the context supplies the base station with routing information; receiving uplink information from a first remote unit; and utilizing the context to route the uplink information to a second remote unit, wherein the routing of the information bypasses network elements external to the local network"(emphasis added).

The applicants submit that Perkins '633 does not teach transferring a routing function from a packet data gateway to a Base Station System. Presumably, the "routing function" of Perkins '633 is the IP LSR information, since that is what is used for routing a reply packet. However, clearly the IP LSR Information is different than what

the present application claims. For example, the IP LSR information is included within a packet sent between the hosts of Perkins '633, not from a packet data gateway to a Base Station System as claimed. Moreover, the IP LSR information enables the receiving host to send a reply to the sending host that does not involve intermediate gateways by using a path reversal technique. Thus, the "routing function" of Perkins '633 appears to not only "move" with the initial packet but also with the reply packet. Again, it appears to be inherently different than the routing function of claim 1 or the context of claim 12, which are transferred to/received at a BSS/base station, respectively. (Additionally, claim 1 recites transferring a routing function from a packet data gateway.)

In the Response to Arguments section of the present office action, the Examiner asserts that the "routing function in Perkins '633 is transferred from the Mobile Router to the Base Access Station," citing Perkins '633 column 3, lines 17-51, which reads (emphasis added):

In response to the mobile host establishing a wireless link with a second base access station on the same or a different subnetwork, the method includes the steps of determining the network address of the second base access station with the mobile host; transmitting the network address of the second base access station from the mobile host to a mobile router that is coupled between the subnetwork and the network, the transmission including the network address of the mobile host; and maintaining the network address of the mobile host and the network address of the second base access station with the mobile router.

The mobile router advertises to the network the network address of the mobile router and also the network address of network associated with the mobile hosts.

The step of transmitting the reply packet includes the steps of receiving the reply packet at the base access station; and determining if the mobile host is currently located within the physical area served by the base access station.

If it is determined that the mobile host is currently located within the physical area served by the base access station, the method forwards the reply packet from the base access station over the wireless link to the mobile host.

If, instead, it is determined that the mobile host is not currently located within the physical area served by the base access station, the method forwards the reply packet from the base access station over the network to the mobile router, if there are no further intermediate addresses within the LSR option. The mobile router then forwards the reply

packet to a second base access station that serves a physical location within which the mobile host is currently located.

Thus, one may alternatively presume that the "routing function" of Perkins '633 is the network address of the mobile router and also the network address of network associated with the mobile hosts. However, claim 1 recites (emphasis added) "wherein transferring the routing function comprises transferring context information that comprises **mobility and security information**," and claim 12 recites (emphasis added) that "the context comprises **mobility and security information**." The applicants submit that this language clarifies that the "routing function" of Perkins '633 is quite different than that described by the present application.

Since the cited prior art does not teach all of the limitations of base claims 1 and 12, neither individually nor in combination, or therefore, all the limitations of their dependent claims, the applicants assert that the Examiner has not shown anticipation nor made a prima facie case for obviousness. No remaining grounds for rejection or objection being given, the applicants now respectfully submit that the claims in their present form are patentable over the prior art of record, and are in condition for allowance. As a result, allowance and issuance of this case is earnestly solicited.

The Examiner is invited to contact the undersigned, if such communication would advance the prosecution of the present application. Lastly, please charge any additional fees (including extension of time fees) or credit overpayment to Deposit Account No. 602117 – Motorola, Inc.

Respectfully submitted,
P. Gilchrist et al.

By: 

Jeffrey K. Jacobs
Attorney for Applicant
Registration No. 44,798
Phone No.: 847/576-5562
Fax No.: 847/576-3750